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FEDERAL-AID HIGHWAY NEAR LENAWEE, MICHIGAN

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# PUBLIC ROADS

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BUREAU OF PUBLIC ROADS

G. P. St. CLAIR, *Editor*

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*The reports of research published in this magazine are necessarily qualified by the conditions of the tests from which the data are obtained. Whenever it is deemed possible to do so, generalizations are drawn from the results of the tests; and, unless this is done, the conclusions formulated must be considered as specifically pertinent only to the described conditions*

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# THE MICHIGAN FINANCIAL SURVEY

Digest of a Survey of the Finances of Michigan in 1930 With Special Reference to Highways, Conducted by the Bureau of Public Roads and the University of Wisconsin

**T**HIS STUDY of highway finance in Michigan is one of a series conducted by the United States Bureau of Public Roads in cooperation with the University of Wisconsin and the respective State highway departments, involving expenditures for highway purposes and the incidence of taxes for these and other purposes. The Michigan survey is based on the calendar year 1930.<sup>1</sup> The following summary of the comprehensive report made by the investigators has been prepared by the Division of Highway Transport of the Bureau in order to make the results available in concise form. The arrangement of material follows that of the Wisconsin and Illinois summaries for greater ease of comparison.<sup>2</sup>

The calendar year 1930 was selected for the study because of its being a United States census year, as well as the latest year for which certain data could be obtained. It is also the same year for which the similar studies in Wisconsin and Illinois were made.

To classify the incidence of taxation, the State was divided into groups of governmental units and into classes of residents. To distribute expenditures, the highway classifications in use in the State were adopted.

Division into groups of governmental units and classes of residents was as follows:

The State Government.

The counties:

*Group 1.*—All counties with a population of over 400 persons per square mile in 1930.

*Group 2.*—All counties with a population of from 75 to 400 persons per square mile in 1930.

*Group 3.*—All counties with a population of from 45 to 74 persons per square mile in 1930.

*Group 4.*—All counties with a population of from 30 to 44 persons per square mile in 1930.

*Group 5.*—All counties with a population of from 20 to 29 persons per square mile in 1930.

The municipalities or local governmental units:

1. Townships (rural areas outside of incorporated municipalities).
2. Incorporated places having a population of 2,500 or less.
3. Incorporated places having a population of 2,500 to 15,000.
4. Incorporated places having a population of 15,000 to 75,000.
5. Incorporated places having a population of 75,000 to 400,000.
6. Incorporated place having a population of over 400,000 (city of Detroit only).

<sup>1</sup> The investigation was directed by Henry R. Trumbower, professor of economics at the University of Wisconsin and economist for the Bureau of Public Roads, assisted by the late A. R. Hirst, engineer, and H. R. Briggs, statistician. The Michigan State Highway Department cooperated in making the facts and data available.

<sup>2</sup> For the summary of the Wisconsin survey, see the April 1933 issue of PUBLIC ROADS, and for Illinois, the May 1933 issue.

Purposes of the investigation were as follows: (1) To study and analyze the direct and indirect highway receipts and disbursements of the State and of the counties, townships, municipalities, and other political subdivisions thereof; (2) to develop facts and information showing the effect of highway and related taxes on property of all kinds; and (3) to develop the total amount of revenues raised for all other governmental purposes of the State, counties, and local units as compared with the revenues raised for highways, bridges, and streets.

The study was undertaken in Michigan partly because of its distinct type of highway development and partly because the financial data pertaining to all governmental units within the State have never before been assembled and analyzed. In connection with the Wisconsin and Illinois surveys it gives a picture of three typical Middle Western States with radically different highway programs.

In these comprehensive investigations many facts pertaining particularly to the subjects investigated and also incidental to the central purposes have been revealed. Some of the conditions noted in Michigan are: (1) Michigan, which started its highway-development program under a system which was highly cooperative among all units of government, has reached a stage where each unit of government is entirely in charge of certain types of highways and entirely divorced from the others; (2) because of the provisions of the Covert road law, special assessments are levied for highway purposes not only in urban areas but also against rural property; (3) practically all portions of the State and county highway systems have some type of surfacing; (4) while there is a tax commission which assembles statistics concerning property taxes and also has jurisdiction over certain other taxes, several different State departments are charged with the administration of a number of important State taxes; (5) there is no central assembly of financial data pertaining to the subdivisions of the State, although the forces of the auditor general make periodic audits of the counties; (6) the records and accounts concerning highways in many counties are inadequate and poorly kept; a uniform system under central control should be installed throughout the State; (7) special assessments have reached the point where "it would seem that special assessments may be levied for almost any purpose and are not only especially burdensome, but in most metropolitan areas they have become so frequent that the payment of same is almost a monthly affair. They seriously impair the credit of any municipality."<sup>3</sup>

## GOVERNMENTAL ORGANIZATION DESCRIBED

The State government is of the usual type, with a general assembly composed of two houses, a governor, and other State elective officers, nine executive offices, and other appointive bodies. In Michigan the office of State highway commissioner is elective.

<sup>3</sup> From the report of the State commission of inquiry and taxation for 1930.



The counties are under the control of the county board of supervisors. This board of supervisors is composed of a representative from each of the townships within the county and also members from the municipalities. There are usually three departments of the county government. These include, first, the general county government, under the immediate jurisdiction of the elective county officers; second, county highway administration, under the control of the county highway department; and third, the drainage districts, under the control of the county drainage commissioner.

The local government consists of a number of concurrent overlapping bodies. The townships are the rural areas. However, villages are considered as a part of the township in which they are located. Incorporated cities are separate and distinct from the townships. Coextensive with the cities and townships are various highway districts, school districts, sanitary districts, park districts, and other special districts. It has not been the practice in this study to make further division of the units of government other than the township and incorporated places. Those other minor governmental areas have been treated as parts of the larger units which contain them.

#### THE TAXING SYSTEM

The major Michigan tax is the general property tax, which is used as the primary source of revenue for the local units of government and is largely under their control.

Counties derive most of their funds from the county general property tax levied by the board of supervisors. This tax is paid by the local governmental subdivisions in proportion to the value of each unit as determined by the county board of supervisors. A State property tax is also levied and distributed for collection among the counties upon equalized values as determined by the State board of equalization.

Among other duties the State tax commission assembles data as to total property tax levies and taxable values. From this information it determines the average property tax rate in the State, which it applies to the amount which the commission has determined to be the value of the railroads and similar utilities operating in Michigan. This tax is the only tax which the public utilities pay and is specifically dedicated for school purposes. Certain minor taxes are administered by the commission, but its major duties are as outlined above.

The State revenue system is quite diversified. Besides the general property tax, there are inheritance taxes, bond and mortgage taxes, a malt tax, a severance tax, special corporation taxes, taxes upon insurance companies, and other minor imposts. These are administered by several different State departments.

#### SOME GENERAL CHARACTERISTICS OF THE STATE DISCUSSED

While in 1930 the population of Michigan was 4,842,325 persons, the concentration was primarily in the southern portion of the State. Over 84 percent of the population is in the southern third of the territory, while 9 percent is in central Michigan, and 6½ percent in the Upper Peninsula. Of the total, 1,245,950 persons are residents of unincorporated territory. Of the remaining 3,596,375 village and city residents, 2,606,335 persons live in cities of over 25,000. Of these, 1,568,662 live in the city of Detroit.

The agricultural and manufacturing industries are also concentrated in the southern portion of the State.

Over 90 percent of the total taxable value is in southern Michigan. In the northern portion of the State there is some mining. The many glacier-made lakes in this region provide facilities for fishing and water sports which, with the favorable summer temperatures, make the resort and tourist business a source of large revenues.

Many of the general relationships are very similar to those found to exist in Wisconsin and Illinois. In all three States there are substantial contributions from municipal groups to rural areas. This is particularly true as to the northern portions of Wisconsin and Michigan. In all three States the one large metropolitan center exerts a very decided effect upon the observed tendencies.

The assessed valuation of all taxable property in Michigan in 1930 was \$8,447,141,100. Of this amount 21 percent was in the townships, 39.1 percent in incorporated places other than Detroit, and 39.9 percent in Detroit. Details are given in table 1.

TABLE 1.—Assessed valuation in the townships and incorporated places of Michigan in 1930

Class of place	Amount	Percent
Townships	\$1,773,958,100	21.0
Places up to 2,500	328,474,700	3.9
Places 2,500 to 15,000	780,537,600	9.3
Places 15,000 to 75,000	1,334,306,300	15.8
Places 75,000 to 400,000	855,928,700	10.1
Detroit	3,373,935,600	39.9
Total	8,447,141,000	100.0

#### THE MICHIGAN HIGHWAY SYSTEM

There were, in 1930, 85,080 miles of rural highways in Michigan. The mileage of urban streets is not known. Of the rural highways, 7,691 miles, or 9 percent, were on the State trunk-line system; 17,175 miles, or 20.2 percent, were county roads; and 60,214 miles, or 70.8 percent, were local, or township, roads. In addition to the rural mileage, the State and county systems include portions within urban areas.

The State highway department has direct control of the trunk-line system, which is subdivided into the Federal-aid system of 4,671 miles and the remaining trunk-line roads, which include approximately 3,000 miles. Together these two groups constitute the State system of through highways. It is almost entirely surfaced. The funds for this State highway system are derived from State imposts upon motor vehicles and from Federal aid. A part of the system was financed from a \$50,000,000 State bond issue, which will be retired from the State's share of the vehicle imposts.

The system of county roads is under the complete control of the county highway departments. It is primarily intended to serve county travel. An unusually high percentage of the county roads are surfaced. The county system is financed in part through an allotment of State funds equal to one half of the annual vehicle-weight tax, or registration fee, collected, and in part from county property imposts, including both general taxes and special assessments.

Local township authorities have had control over 70.8 percent of all rural highways. Beginning in 1932, these local township roads are all being placed under county control. One fifth of them is to be so transferred annually. By 1937 all rural roads will be under the supervision either of the State or the county highway departments. It is interesting to note that of the

total rural highway mileage, about 10 times the mileage under the control of the State highway department is under the jurisdiction of local authorities.

Few facts are available as to city and village streets in the State of Michigan. Little is known as to their total mileage or their types of surface. It is known that out of the \$105,177,100 expended on all highways in Michigan in 1930, \$37,502,400, or 35.7 percent of the total of all highway expenditures of the year, were local expenditures on municipal streets. Of this amount, \$26,300,200 was expended by the city of Detroit.

#### THE METHOD OF OBTAINING FINANCIAL DATA

Since in Michigan there is, with the exception of certain facts as to property valuations and general tax

levies, no central assembly of county, township, and municipal financial data, it was necessary in the conduct of this survey to obtain data directly from these governmental subdivisions themselves. Michigan statutes do provide that every governmental subdivision must annually publish a complete financial report covering all transactions of the preceding year. These published reports were obtained for the year most nearly corresponding to that of the study. Any differences resulting in the use of such fiscal year reports as compared with the calendar year are probably less than would have been the case if attempts had been made to adjust the fiscal year statements to the calendar year base. With few exceptions, adequate reports were received from the counties and all of the larger cities. Because of the importance of the communities and the complexities of the local records, the statistics for Wayne County and the city of Detroit were obtained directly at the proper local offices in these places. Field visits were also made by members of the staff to other counties and cities in cases where adequate data could not be obtained from the annual reports. The office of the State auditor general also makes periodic audits of all counties. These reports furnished a valuable additional source of information.

For the villages, townships, and small cities, the data were obtained through correspondence. Local officials evinced a willingness to cooperate with the survey, with the result that the necessary statements were provided by more than 60 percent of these minor governmental subdivisions. As there is a close correlation in these units of government between tax levies and expenditures, and as the tax levies were known, it

TABLE 2.—Total of all State and local charges imposed by the States and its subdivisions for collection in 1930

Imposed by—	Amount	Percent	Per capita
State.....	\$112,620,900	29.3	\$23.26
Counties.....	54,625,400	14.2	11.28
Townships.....	29,642,300	7.7	23.79
Places up to 2,500.....	9,555,700	2.5	32.47
Places 2,500 to 15,000.....	26,397,000	6.9	45.08
Places 15,000 to 75,000.....	37,464,300	9.7	56.45
Places 75,000 to 400,000.....	24,212,400	6.3	50.01
Detroit.....	90,214,300	23.4	57.51
Total.....	384,732,300	100.0	79.45

was possible to estimate the facts for the remaining townships and villages with reasonable accuracy.

The State expenditures were taken directly from the

books of the State auditor general. The State highway expenditures for construction and maintenance and the allocation of these amounts between townships and incorporated places were prepared for this study by the State highway department.

#### TAXES LEVIED AND INCIDENCE OF TAXATION

In 1930 the total of all imposts charged against persons and property in Michigan was \$384,732,300. The amount of these imposts imposed by authority of each of the governmental agencies is shown in table 2. All of the State and county imposts and taxes are ultimately paid by taxpayers in the townships and incorporated places. The amounts shown in table 2, restated to show the distribution as ultimately payable, are given in table 3. The totals are also subdivided into general property taxes, motor-vehicle imposts, and other taxes.

While general property taxes are the chief source of revenue in Michigan, the

State has a variety of other taxes. The amount provided by each major form of tax or impost is shown in table 4.

TABLE 3.—Total of all State and local charges imposed in 1930 as payable by taxpayers in the local units of government

Payable by taxpayers in—	General property taxes	Motor-vehicle and motor-fuel taxes	Other taxes	All taxes	Percent	Per capita
Townships.....	\$49,383,500	\$8,967,300	\$11,379,000	\$69,729,800	18.1	\$55.97
Places up to 2,500.....	12,547,000	3,212,700	2,882,000	18,641,700	4.8	63.34
Places 2,500 to 15,000.....	32,633,200	5,506,300	7,217,100	45,356,600	11.8	77.46
Places 15,000 to 75,000.....	46,989,500	6,194,100	9,177,300	62,360,900	16.2	93.96
Places 75,000 to 400,000.....	29,373,700	5,026,000	5,506,600	39,906,300	10.4	82.42
Detroit.....	111,284,000	15,330,700	22,122,300	148,737,000	38.7	94.82
Total.....	282,210,900	44,237,100	58,284,300	384,732,300	100.0	79.45

TABLE 4.—Sources of revenue by type of tax or revenue in 1930

Type of tax	Amount	Percent	Per capita
Ad valorem general taxes.....	\$266,776,400	69.4	\$55.09
Special assessments <sup>1</sup> .....	15,434,500	4.0	3.19
Public utility taxes.....	14,253,800	3.7	2.94
State motor-vehicle imposts.....	44,237,100	11.5	9.14
Bond and mortgage taxes.....	1,909,300	.5	.39
Other local imposts.....	19,400,500	5.1	4.01
Inheritance taxes.....	5,932,200	1.6	1.23
Insurance taxes.....	3,879,300	1.0	.80
Corporation imposts.....	7,452,800	1.9	1.51
Miscellaneous State revenues.....	5,456,400	1.3	1.12
Total.....	384,732,300	100.0	79.45

## RECAPITULATION

General property taxes.....	\$266,776,400	69.4	\$55.09
Special assessments <sup>1</sup> .....	15,434,500	4.0	3.19
Motor-vehicle imposts.....	44,237,100	11.5	9.14
Other local receipts.....	19,400,500	5.1	4.00
Other State receipts.....	38,883,800	10.0	8.03

<sup>1</sup> For highways only.

It is of interest to note the relationship between the revenues raised from property taxation and from other imposts. In Michigan, quite consistently, about 73 percent of the total funds come from property imposts. Table 5 gives the rates per \$100 of taxable property needed to raise all funds by property tax levies and the actual property tax as it was levied.

TABLE 5.—Comparison between a rate on general property necessary to produce all revenues from property taxes and the actual tax rate on general property as levied, per \$100 valuation

Class of place	Actual tax rate on general property as levied	Tax rate needed to raise all funds by general property tax levies	Percentage that general property taxes are of all taxes and imposts
Townships.....	\$2.78	\$3.93	70.8
Places up to 2,500.....	3.82	5.68	67.3
Places 2,500 to 15,000.....	4.18	5.81	71.9
Places 15,000 to 75,000.....	3.52	4.67	75.4
Places 75,000 to 400,000.....	3.43	4.66	73.6
Detroit.....	3.30	4.41	74.8
Average for State.....	3.34	4.56	73.4

## STREET AND HIGHWAY REVENUES DERIVED FROM GENERAL PROPERTY AND MOTOR VEHICLE TAXES

Of the total 1930 tax bill of \$384,732,300, the sum of \$111,853,900 was levied for street and highway purposes. Table 6 gives the allocation of highway taxes by type of tax.

TABLE 6.—Taxation imposed for street and highway purposes in 1930

Type of tax	Amount	Percent	Percentage of total	Per capita
On general property:				
State.....	\$40,600	0.1		\$0.01
County.....	19,248,000	28.5		3.97
Local.....	32,893,700	48.6		6.79
Special assessments.....	15,434,500	22.8		3.19
Total.....	67,616,800	100.0	60.5	13.96
On motor vehicles:				
Registration fees.....	21,247,800	48.0		4.39
Fuel taxes.....	21,641,200	48.9		4.47
Other fees.....	1,348,100	3.1		.28
Total.....	44,237,100	100.0	39.5	9.14
Grand total.....	111,853,900		100.0	23.10

Levies on general property, including special assessments, total \$67,616,800, of which \$39,547,400 was imposed specifically for city streets and \$8,821,400 for rural roads. A total tax of \$19,248,000 was levied on general property by the counties, for use on the county highway systems, including portions within incorporated places.

Imposts on motor vehicles and motor fuel totaled \$44,237,100. The money so raised is spent on the State and county systems, including portions of these systems within incorporated places.

Like all other taxes, these street and highway levies are ultimately paid by taxpayers in the townships and urban communities. Table 7 shows the imposts of each type for streets and highways as they are charged to taxpayers in the several classes of place.

## MOTOR-VEHICLE REGISTRATIONS, TAXES, AND TRAVEL DISCUSSED

There were 1,378,214 motor vehicles of all types registered in the State of Michigan in 1930, or 1 for every 3.5 persons. There was a passenger car for every 4.2 persons and a truck or bus for every 22.8 persons.

It was important to allocate as accurately as possible the motor vehicles among the local units of government. Data was obtained from the motor vehicle license department and also allocations made by the State highway department. In addition, this material was supplemented by a study of a sample of 20,000 car registrations. The situs of cars of uncertain location was verified by correspondence. From the facts so ascertained a reasonable allocation was made by place of ownership of all motor vehicles among the various classes of local governmental units. These data, divided between passenger automobiles and trucks and busses, are given in table 8.

In 1930, Michigan vehicles paid registration fees based upon weight amounting to \$21,247,800. In addition to the registration fees there are allied fees such as car registration fees, drivers' licenses, chauffeurs' licenses and transfer fees, administered by the motor vehicle licensing department which brought in revenues of \$1,147,400. The total cost of the entire department for all of these services was \$1,069,200. This amount was 4.77 percent of all the fees received by the department, and averaged 78 cents per motor vehicle registered. As shown in table 8, the average license fees tend to increase fairly steadily as the place of residence becomes more urban. This is true for trucks and busses as well as automobiles. While the average fee per motor vehicle was \$15.42, the fee for motor trucks and busses was \$24.52, as compared with \$13.77 for passenger cars.

## GASOLINE-TAX PAYMENTS DETERMINED BY QUESTIONNAIRE METHOD

The 3-cent motor fuel tax in Michigan in 1930 produced a net revenue, after refunds, of \$21,641,200. The cost of collection was \$41,400, or about \$1.91 per \$1,000 collected.

To find the gasoline tax paid by vehicles owned in the various groups of places, questionnaires were sent to 50,000 motor-vehicle owners in the State. In order to obtain a fair cross section, this sample was proportioned to the motor-vehicle ownership within the various places. This survey was conducted during the last months of 1931 and the first part of 1932. Since it was impossible to expect intelligent answers from motor-vehicle operators except as to operations in the year immediately preceding, the requests for data on



TABLE 7.—Incidence of street and highway taxation

Payable by taxpayers in—	Type of impost											
	Motor-fuel tax		Registration fees		Other motor-vehicle imposts		Special assessments		Property taxes		Total	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Townships.....	\$4, 115, 960	19.0	\$4, 502, 800	21.2	\$348, 600	25.9	\$2, 150, 000	13.9	\$13, 216, 400	25.3	\$24, 333, 700	21.8
Places up to 2,500.....	1, 089, 100	7.8	1, 443, 200	6.8	80, 400	6.0	404, 500	2.6	2, 904, 000	5.6	6, 521, 200	5.8
Places 2,500 to 15,000.....	2, 741, 400	12.7	2, 602, 400	12.2	162, 500	12.0	1, 650, 400	10.7	5, 487, 000	10.5	12, 643, 700	11.3
Places 15,000 to 75,000.....	3, 056, 800	14.1	2, 952, 000	13.9	185, 300	13.7	2, 343, 700	15.2	7, 035, 600	13.5	15, 573, 400	13.9
Places 75,000 to 400,000.....	2, 470, 300	11.4	2, 420, 900	11.4	134, 800	10.0	1, 960, 400	12.7	3, 888, 600	7.5	10, 875, 000	9.7
Detroit.....	7, 567, 700	35.0	7, 326, 500	34.5	436, 500	32.4	6, 925, 500	44.9	19, 650, 700	37.6	41, 906, 900	37.5
Total.....	21, 641, 200	100.0	21, 247, 800	100.0	1, 348, 100	100.0	15, 434, 500	100.0	52, 182, 300	100.0	111, 853, 900	100.0

TABLE 8.—Motor-vehicle registrations and license fees in 1930

Place of ownership	Registration	Per-centage of total	Persons per vehicle	Registration fees	Per-centage of total	Pay-ments per vehicle
Townships:						
Automobiles.....	273,044	23.4	4.6	\$3,419,100	21.3	\$12.52
Trucks and busses.....	65,906	31.1	18.9	1,083,700	20.9	16.44
Total.....	338,950	24.6	3.7	4,502,800	21.2	13.28
Places up to 2,500:						
Automobiles.....	84,492	7.2	3.5	1,095,800	6.8	12.97
Trucks and busses.....	19,225	9.1	15.3	347,400	6.7	18.07
Total.....	103,717	7.5	2.8	1,443,200	6.8	13.91
Places 2,500 to 15,000:						
Automobiles.....	147,252	12.6	4.0	2,006,200	12.5	13.62
Trucks and busses.....	27,276	12.9	21.5	596,200	11.5	21.86
Total.....	174,528	12.7	3.4	2,602,400	12.2	14.91
Places 15,000 to 75,000:						
Automobiles.....	165,193	14.2	4.0	2,334,100	14.5	14.13
Trucks and busses.....	23,440	11.1	28.3	617,900	11.9	26.36
Total.....	188,633	13.7	3.4	2,952,000	13.9	15.65
Places 75,000 to 400,000:						
Automobiles.....	132,656	11.4	3.7	1,876,400	11.7	14.14
Trucks and busses.....	20,055	9.5	24.1	544,500	10.5	27.15
Total.....	152,711	11.1	3.5	2,420,900	11.4	15.85
Detroit:						
Automobiles.....	363,978	31.2	4.3	5,327,100	33.2	14.64
Trucks and busses.....	55,697	26.3	28.2	1,999,400	38.5	35.90
Total.....	419,675	30.4	3.7	7,326,500	34.5	17.46
State totals:						
Automobiles.....	1,166,615	84.6	4.2	16,058,700	75.6	13.77
Trucks and busses.....	211,599	15.4	22.8	5,189,100	24.4	24.52
Total.....	1,378,214	100.0	37.0	21,247,800	100.0	15.42

TABLE 9.—Average miles traveled and average gasoline consumption in 1931 by place of ownership

Place of ownership	Number of reports tabulated			Average gasoline consumption			Average miles traveled		
	Automobiles	Trucks and busses	All vehicles	Automobiles	Trucks and busses	All vehicles	Automobiles	Trucks and busses	All vehicles
Townships.....	1,977	303	2,280	508	712	535	7,966	8,686	8,062
Places up to 2,500.....	851	91	942	1,216	682	9,258	13,438	9,662	12,822
Places 2,500 to 15,000.....	1,386	138	1,524	655	967	680	9,304	10,668	9,427
Places 15,000 to 75,000.....	1,218	87	1,305	667	1,181	701	9,909	10,550	9,952
Places 75,000 to 400,000.....	1,088	82	1,170	699	932	716	10,142	10,130	10,141
Detroit.....	2,404	85	2,489	731	1,351	752	10,389	12,513	10,461
Total.....	8,924	786	9,710	647	963	673	9,480	10,354	9,551

is undoubtedly evasion of motor-fuel taxes in Michigan as well as in other States of an unknown amount. There is also to be considered the fact that the questionnaire replies are for 1931, in which year the total sale of motor fuel was greater than in the preceding year. It was assumed in this survey that while the motor-vehicle mileage as ascertained by this method was undoubtedly higher than the average travel in the State, the percentage of error would tend to be uniform throughout the sample, since a representative sample was taken. Therefore, proportionate reductions were made in all computations of gasoline taxes paid, in order to reduce the figures to the actual motor-vehicle fuel imposts known to have been paid.

The per vehicle payments of motor-fuel taxes, computed on the basis outlined above, were as follows:

Vehicles owned in—	
Townships.....	\$12.14
Places up to 2,500.....	16.29
Places 2,500 to 15,000.....	15.71
Places 15,000 to 75,000.....	16.21
Places 75,000 to 400,000.....	16.18
Detroit.....	18.03

Average for State..... 15.70

Because urban cars tend to travel greater mileages and also, as indicated by the license fees paid, are, on the average, heavier than rural cars, the gasoline taxes paid in urban communities are higher than those paid in the rural districts.

The data given in table 9 show that the average automobile consumed only 67 percent as much gasoline as was the average for trucks and busses. This fact is reflected in the gasoline-tax payments, the average for automobiles being \$14.39, as against \$22.96 for trucks and busses. Passenger automobiles paid 77.6 percent of the total gasoline-tax payments; trucks and busses, 22.4 percent.

travel and gasoline consumed were worded to cover the calendar year 1931. It was presumed that the travel, and therefore the gasoline consumption, were proportionately the same in 1930 as in 1931. Usable replies were received from 9,710 owners. The data so obtained is summarized in table 9.

The indicated total gallonage of gasoline consumed in the year, based on the replies of the operators, is approximately 35 percent greater than that computed on the basis of the tax-paid gallonage. This excess was surprising in view of the fact that exactly similar data obtained from questionnaires in both Illinois and Wisconsin give an indicated gallonage much more nearly approximating that upon which the tax was actually paid. There may be three causes for this difference. The first is that it is a possibility that those driving the shortest distances failed to answer the questionnaire, while on the contrary, those having high mileages would tend to report the fact. The second is that exemption is claimed for gasoline supposedly purchased for nonhighway use, but which actually was used in motor vehicles. The third cause is that there

The total payments of motor-fuel taxes and vehicle licenses, as well as other motor-vehicle imposts, by motor-vehicle owners in the several classes of local unit were given in table 7. The State highway program is financed entirely from these motor-vehicle imposts plus Federal aid. An amount equal to one half of the total vehicle-license fee or weight tax is returned to the counties. Seven eighths of this fund is distributed in proportion to the fees derived from each county and the other one eighth is allocated equally among the 83 counties.

TABLE 9 AFFORDS BASIS FOR ESTIMATING RELATIVE TRAVEL BY RURAL AND URBAN VEHICLES

The data given in table 9 cannot very well be used to estimate the total travel of Michigan vehicles in 1930, since the indicated mileages and gasoline consumption so greatly exceed figures which are based on the actual gasoline-tax payments. The estimate of total travel given in the Michigan transportation survey<sup>4</sup> was based on the taxed gallonage and a figure for mileage per gallon obtained from an analysis of the questionnaire data given in table 9 of this report.

It is reasonable to assume, however, that the errors of the questionnaire are proportional throughout the State; and that the relative travel in 1930 by vehicles owned in the several classes of place was substantially as is indicated in table 9. On this assumption the average mileages given in that table have been applied to the registration figures of table 8, to obtain the percentage of total traffic of Michigan vehicles in 1930 contributed by motor vehicles owned in each class of place. These percentages were as follows:

Percentage of total travel contributed by vehicles owned in—	
Townships.....	20.6
Places up to 2,500.....	7.8
Places 2,500 to 15,000.....	12.4
Places 15,000 to 75,000.....	14.1
Places 75,000 to 400,000.....	11.6
Detroit.....	33.5
Entire State.....	100.0

It was also found by the same method of computation that passenger automobiles contributed 83 percent of the total travel and trucks and busses 17 percent.

#### DATA ON MOTOR-VEHICLE TAXES AND TRAVEL SUMMARIZED

In table 10 the payments by motor-vehicle owners in each class of local unit or place are given in both percentage and per-vehicle forms. Percentages of population, motor vehicles registered, and travel are also given for purposes of comparison. The tendency of vehicle imposts to be greatest in the places with the greatest densities in population is decided. Thus the townships, with 24.6 of the registered motor vehicles, paid only 20.3 percent of the motor-vehicle taxes; while Detroit, with 30.4 percent of the registration, paid 34.6 percent of the motor-vehicle taxes.

From table 9 and data previously given, the following conclusions have been derived regarding the taxation and travel of motor vehicles in Michigan in 1930.

1. The townships, with 25.7 percent of the population, contained 24.6 percent of the registered motor vehicles; motor-vehicle owners in townships paid 20.1 percent of the motor-fuel taxes and registration fees, and contributed 20.6 percent of the total travel of Michigan vehicles.

<sup>4</sup> A Survey of Highway Transportation in Michigan, PUBLIC ROADS, vol. 13, no. 12, February 1933, p. 190.

TABLE 10.—Comparison of the several classes of local government unit as to motor-vehicle imposts paid, population, number of vehicles registered, and share of total State traffic contributed by vehicles owned in each class of place

Class of place	Motor-fuel taxes paid	Registration fees paid	Motor-fuel taxes and registration fees paid	All motor-vehicle imposts paid <sup>1</sup>	Population	Motor vehicles registered	Contribution to total travel
Townships:							
Percent.....	19.0	21.2	20.1	20.3	25.7	24.6	20.6
Per vehicle.....	\$12.14	\$13.28	\$25.42				
Places up to 2,500:							
Percent.....	7.8	6.8	7.3	7.3	6.1	7.5	7.8
Per vehicle.....	\$16.29	\$13.91	\$30.20				
Places 2,500 to 15,000:							
Percent.....	12.7	12.2	12.5	12.4	12.1	12.7	12.4
Per vehicle.....	\$15.71	\$14.91	\$30.62				
Places 15,000 to 75,000:							
Percent.....	14.1	13.9	14.0	14.0	13.7	13.7	14.1
Per vehicle.....	\$16.21	\$15.65	\$31.86				
Places 75,000 to 400,000:							
Percent.....	11.4	11.4	11.4	11.4	10.0	11.1	11.6
Per vehicle.....	\$16.18	\$15.85	\$32.03				
Detroit:							
Percent.....	35.0	34.5	34.7	34.6	32.4	30.4	33.5
Per vehicle.....	\$18.03	\$17.46	\$35.49				
Entire State:							
Percent.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Per vehicle.....	\$15.70	\$15.42	\$31.12				

<sup>1</sup> For motor-vehicle imposts other than motor-fuel taxes and registration fees, see table 7.

2. Incorporated places other than Detroit, with 41.9 percent of the population, contained 45 percent of the registered motor vehicles; motor-vehicle owners in these places paid 45.2 percent of the motor-fuel taxes and registration fees, and contributed 45.9 percent of the total travel of Michigan vehicles.

3. Detroit, with 32.4 percent of the population, contained 30.4 percent of the registered motor vehicles; motor-vehicle owners in Detroit paid 34.7 percent of the motor-fuel taxes and registration fees, and contributed 33.5 percent of the total travel of Michigan vehicles.

4. Of all imposts on motor vehicles, the owners of motor vehicles in the townships paid 20.3 percent; those in incorporated places other than Detroit paid 45.1 percent; and those in Detroit paid 34.6 percent.

5. The average registration fee paid was \$15.42; the average motor fuel tax payment, \$15.70; the total, \$31.12. Both registration fees and gasoline-tax payments were found to increase as the place of residence becomes more urban.

6. The average registration fee paid by passenger automobiles was \$13.77; by trucks and busses, \$24.52. The average motor-fuel tax payment by passenger automobiles was \$14.39; by trucks and busses, \$22.96. Thus, the average payments in registration fees and gasoline taxes were: Passenger automobiles, \$28.16; trucks and busses, \$47.48.

7. The owners of motor trucks and busses, which constituted 15.4 percent of the total registrations and contributed 17 percent of the total travel of Michigan vehicles, paid 24.4 percent of the registration fees and 22.4 percent of the motor-fuel taxes.

#### SPECIAL ASSESSMENTS AND THEIR PLACE IN THE HIGHWAY PROGRAM

In Michigan many public improvements are financed through special assessment. In the cities not only is almost the entire cost of street improvements and similar public works such as sewers and water mains customarily met through special assessments, but such imposts



are made for fire protection, public buildings, and other purposes. A special legislative committee in its report on Michigan taxes states, "One of the most burdensome taxes in Michigan involving our municipalities is that known as 'special assessment taxes.' It would seem that special assessments may be levied for almost any purpose and are not only especially burdensome, but in our metropolitan areas they have become so frequent that the payment is almost a monthly affair. They seriously impair the credit of any municipality."

\* \* \* While there is no legislation that can be enacted that will relieve these taxpayers of their present burdens \* \* \* the State can take action, the effect of which will be to afford some measure of protection for the taxpayers of the State from the pyramiding of special assessment taxes in the future." After suggesting remedial legislation, the committee states that among the effects of the proposed legislation one result would be to "definitely limit the maximum assessment against any particular piece of property and preclude the practical confiscation of the property by the levy of special assessment taxes."<sup>5</sup>

These special assessments in Michigan as well as in most other States are not generally regarded as a part of the municipal financial operations and do not appear normally in any statement of receipts or disbursements. However, exactly the same improvements are financed in some localities from special assessments and in others by general-tax levies. Any financial study which fails to take into consideration the enormous public costs, especially in connection with highway improvements, paid for some of these revenues, fails to present a true and complete picture of the situation. As has been indicated by the statements in the previous paragraph these special assessments may become excessively oppressive.

Not only are special assessments a problem in municipalities, but in Michigan they are also prevalent in rural areas. This is due to the Michigan road district law commonly termed the "Covert road act" and the very similar "drainage act." Under these laws special districts are created for the building of highways and for the establishment of drainage areas.

While there are a number of States which permit the formation of rural special assessment road districts, Michigan apparently is about the only State where extensive use of this method of financing rural roads has been made in recent years.

The intent of the Covert road act is to provide an additional method of constructing and improving public highways where a portion of the cost is paid by special assessments upon the lands benefited. When the owners of 66 percent of the lineal frontage of lands touching any highway desire to improve such highways, they may file application with the county road commissioners for the creation of a special assessment district. The commissioners then may fix the boundary of a special assessment district which may include property not touching the highway contemplated and may, without affording them a voice in the matter, cause property owners removed from the highway to have assessments levied against their property for improvements which they may not have desired. After fixing the district, the commissioners allocate the costs. There are no rules or established procedure for this process. A portion of the entire costs is levied as a special assessment against the property benefited.

<sup>5</sup> Report of the State commission of inquiry into taxation, 1930. Pp. 90 and 91.

This may vary from as low as 15 percent of the entire cost up to as high as 65 percent. A part of the cost of each project is charged against the township at large, and another part is charged against the county at large. The proportionate amounts of each of these charges may vary as much as is the case with the amounts charged against the property benefited. There is also no uniformity or system in apportioning the benefits against the property included. Various types of frontage and area bases are used.

The number of these Covert road projects runs into the thousands. In 1930 Berrien County alone had 127 active projects. In some counties intelligent and systematic use of the Covert road procedure has resulted in a good system of improved, connected roads serving local traffic. This is one of the reasons for the high percentage of local surfaced roads in the State of Michigan. In other counties, particularly in the Detroit area, an overdevelopment has resulted and local highways have been built for which there is no economic justification. Some townships are covered with a network of concrete roads, and in some cases a considerable portion of these highways have had street lighting installed. The result is that in this area the charges now falling due to meet payments on Covert road bonds are greater than the property owners can bear.

At the present time there are not many new Covert projects, but there are heavy payments remaining on previous work. The report of the legislative committee summarizes the situation well when it states that "This act has undoubtedly caused considerable tax distress throughout certain communities of the State and undoubtedly it should be amended. In fact, there are many persons who advocate its repeal. However, this action does not seem necessary, as it is believed that it can be amended in such a way as to preserve its good features and eliminate its bad features. Improvements which can be constructed only through the medium of this law are essential to the welfare of the people in many sections of the State and until a satisfactory substitute, which provides such facilities under a sounder plan of financing, is proposed, the revision of the present law rather than its repeal seems more logical."

The drainage law is very similar to the Covert law. The number of projects undertaken under this law greatly exceed the Covert projects, but the average expenditure is much less.

In 1930 there were over \$70,000,000 of outstanding bonds covering these local highway and drainage undertakings; of this total, \$54,000,000 were highway bonds and \$16,000,000 drainage bonds. Thus, in Michigan, both in urban and rural areas, special assessments are responsible for a large portion of the imposts. Each special assessment project is handled separately and not as a part of the general business of the community. In many counties records can be obtained only with difficulty, if at all. Although a very large portion of public improvements have been financed through the special assessments, present economic conditions have served to check the Covert and drainage projects in Michigan.

#### INDEBTEDNESS

The outstanding debt of the State and its subdivisions in 1930 was \$816,388,500. The sum of \$401,567,700, or almost one half of the total, was incurred for public

benefits such as the protection of person and property, sanitation, and parks. Highways and education were almost equally responsible for the remainder, \$202,613,000, or 24.8 percent, being incurred for highways and \$204,307,500, or 25 percent, being incurred for schools. For general governmental purposes the indebtedness was less than 1 percent. This debt was incurred primarily for public buildings, such as court-houses and city halls.

All of the governmental units of Michigan may incur indebtedness. Of the State total the greatest portion is within the municipalities, which had a total indebtedness of \$633,133,000. Townships had an indebtedness of \$64,058,000. The county debt was \$35,710,300, and that of the State \$83,487,200. Of the State debt, \$30,000,000 were obligations incurred for the payment of the soldiers' bonus and \$50,000,000 for highway purposes. Of the county and township debt, the total Covert road bonds have been apportioned between the counties and townships in the ratio of the respective obligations assumed by each for the retirement.

County debts are not proportionately high. There were only six counties having obligations of over \$1,000,000. Outside of Wayne County, practically all of the county debt was for highways.

The greatest amount of indebtedness is found in the cities. In the small places, indebtedness was \$77.32 per capita and in the city of Detroit \$239.44. There are individual communities in the Detroit area where the per capita indebtedness is greatly in excess of this figure.

General indebtedness is limited by statutory limitations. This has resulted in some cases of excessive valuations of property to increase the base for borrowings. Special assessment debts are subject to no such limitations.

The policy of Michigan with respect to debt retirement makes impracticable a table showing the debt service for the year comparable to the tables in the Wisconsin and Illinois reports. Debt service consists of the interest paid and the debt principal retired each year. Total interest payments during 1930 were \$36,928,200, of which \$4,023,700 was paid by the State government, \$20,329,900 by Wayne County, and \$12,574,600 by all other units.

A common public policy in Michigan is to issue long-term obligations in the form of sinking-fund bonds. Funds designated for the eventual retirements of these bonds when they become due are paid into the sinking fund. Large amounts of this nature were set aside by the State government during the year, but no obligations were actually paid. Since none of the obligations were retired and the full amount was still outstanding, there was no actual principal retirement.

The State highway bond sinking fund may be cited as an example. During the calendar year 1930 the State paid \$2,507,800 interest upon its highway debt.

There was paid into the highway bond sinking fund in the fiscal year ending 1930, \$4,832,900, and in the fiscal year ending in 1931, \$7,377,900. It is obvious, therefore, that funds in excess of interest requirements are being set aside annually. Not less than \$3,000,000 of the gasoline tax raised must be used for the payment of interest and principal on State highway bonds, and from the motor-vehicle licenses an additional amount for the same purpose of \$1,200,000. Therefore, even though no bonds are retired, of the motor-vehicle imposts each year approximately \$1,700,000 at the minimum are set aside for bond retirement. In recent years several millions have been advanced from the highway bond sinking fund to the project for the relocation of the Grand Trunk Railroad right of way, such loans to be repaid with interest in accordance with the statutes. Substantial amounts of the outstanding State highway bonds have also been purchased out of the sinking fund and will be held in the fund until time for their retirement. The same general situation applies to State

sinking funds for other bonds and to the indebtedness of many communities in Michigan. Thus, there are large sums set aside and dedicated to retirement, but no actual cancellation of the obligations which can technically be listed under debt service.

In some cases there is an apparent material reduction in indebtedness when actually nothing of the kind has transpired. Enormous obligations in the city of Detroit were paid, but were replaced by others exceeding those which were retired. A tabulation, therefore, showing the principal paid on debt would indicate that the State government was retiring no indebtedness, while actually large amounts were being set

aside for that eventual use, and that the city of Detroit was making a material reduction in its obligations, when actually new debts were being incurred of the same nature and to a greater extent than the amounts retired.

#### GENERAL EXPENDITURES ANALYZED

In Michigan in 1930, \$384,732,300 was the public charge levied against persons and property within the State. For the same year the public expenditures, excluding principal payments on bonds and payments into sinking funds, amounted to \$417,899,500. There can be no exact balance between receipts and expenditures. Taxes are imposed for two purposes. The first is to defray certain current public costs. The second is to pay public debts falling due which were incurred to finance public operations in prior years. A further difference in addition to the time element is that the imposts shown are the taxes as levied. It is possible that in some levies comparatively large sums may remain delinquent in any one particular year although eventually practically the entire amounts will be collected.

The funds for expenditures come from current taxes and from borrowings both in the form of temporary

#### MICHIGAN EXPENDITURES IN 1930

The total expenditures (exclusive of principal payments on bonds and loans) by all units of government in Michigan in 1930 were \$417,899,500, of which \$105,177,100, or 25.2 percent, was expended for highways and streets; \$131,495,300, or 31.5 percent, for education; \$164,966,900, or 39.4 percent, for public benefit; and \$16,260,200, or 3.9 percent, for other governmental purposes.

Expenditures by the State were \$69,141,200, or 16.5 percent; by the counties, \$68,910,300, or 16.5 percent; by Detroit, \$136,116,600, or 32.6 percent; by other incorporated places, \$108,417,100, or 25.9 percent; by the townships, \$35,314,300, or 8.5 percent.

Of the total expenditures, 24.3 percent was made in rural areas (townships); 5.4 percent in incorporated places having a population of 2,500 or less; 9.9 percent in places of 2,500 to 15,000 population; 12.2 percent in places of 15,000 to 75,000 population; 7.3 percent in places of 75,000 to 400,000 population; and 40.9 percent in Detroit.

loans and long-time obligations. There are also frequent surpluses or balances in accounts which may be used for current undertakings.

Thus generally the funds from taxes are used to meet current and past public costs; the funds for current expenditures are derived from the concurrent taxes and from loans to be repaid in the future. In general, however, public financial transactions tend to change gradually, and there is not a great difference between the total taxes imposed for a given year and the total expenditures within the same year. This is particularly true of the less complex units of government.

Of the total of public expenditures in Michigan of \$417,899,500, \$105,177,100, or 25.2 percent of the total, was expended for all roads and streets.

Included in this total are the costs necessary for keeping all public highways in both cities and rural communities open for travel. Highway expenditures are explained in great detail in the section following the discussion of expenditures in general.

The sum of \$131,495,300, or 31.5 percent of the total, was expended for education. This includes the common school system, institutions of higher learning, and libraries.

The sum of \$164,966,900, or 39.4 percent of the total, was expended for general public benefits. Included in this classification are all costs pertaining to protection of person and property, public health, recreation, and such items.

For other governmental purposes, the expenditure was \$16,260,200, or 3.9 percent of the total. Under the cost of government are included only the executive and legislative departments. Officials such as sheriffs, State's attorneys, and others engaged in the enforcement of law and order are classified under the public benefit section.

TABLE 11.—All State and local expenditures in 1930 by units of government

Expended by—	Total amount	Percent	Per capita				
			Highways	Education	Public benefit	Government	Total
State.....	\$69,141,200	16.5	\$6.86	\$2.12	\$4.90	\$0.40	\$14.28
Counties.....	68,910,300	16.5	5.82	.13	7.68	.60	14.23
Townships.....	35,314,300	8.5	5.02	20.01	.96	2.35	28.34
Places up to 2,500.....	15,581,300	3.7	5.87	33.84	9.11	4.12	52.94
Places 2,500 to 15,000.....	30,146,100	7.2	7.41	26.92	14.04	3.12	51.49
Places 15,000 to 75,000.....	38,842,000	9.3	5.02	30.52	20.69	2.30	58.53
Places 75,000 to 400,000.....	23,847,700	5.7	3.74	26.71	17.30	1.50	49.25
Detroit.....	136,116,600	32.6	16.76	23.44	44.50	2.07	86.77
Total.....	417,899,500	100.0	21.72	27.15	34.07	3.36	86.30

TABLE 12.—Percentage relationships of expenditures by purpose and by units of government in 1930

Unit of government	Percentages of expenditures of the units of government for the purpose indicated					Percentage of the total expenditures for each purpose made by each unit of government				
	Highways	Education	Public benefit	Government	All purposes	Highways	Education	Public benefit	Government	All purposes
State.....	48.1	14.8	34.3	2.8	100.0	31.6	7.8	14.4	11.9	16.5
County.....	40.9	.9	54.0	4.2	100.0	26.8	.5	22.6	17.8	16.5
Townships.....	17.7	70.6	3.4	8.3	100.0	6.0	19.0	.7	18.0	8.5
Places up to 2,500.....	11.1	63.9	17.2	7.8	100.0	1.6	7.6	1.6	7.4	3.7
Places 2,500 to 15,000.....	14.4	52.3	27.3	6.0	100.0	4.1	12.0	5.0	11.2	7.2
Places 15,000 to 75,000.....	8.6	52.1	35.4	3.9	100.0	3.2	15.4	8.3	9.4	9.3
Places 75,000 to 400,000.....	7.6	54.2	35.1	3.1	100.0	1.7	9.8	5.1	4.5	5.7
Detroit.....	19.3	27.0	51.3	2.4	100.0	25.0	27.9	42.3	19.9	32.6
Total.....	25.2	31.5	39.4	3.9	100.0	100.0	100.0	100.0	100.0	100.0

Table 11 subdivides the total of all the expenditures within the State of Michigan by the expending agency and gives in addition to the total in each governmental unit the amount per capita expended for every purpose.

Table 12 summarizes in terms of percentages many of the important relationships disclosed by the study. A careful examination of this table will disclose many interesting facts and tendencies in Michigan public expenditures. The first major division of the table shows, in percentage form, the expenditures made by each unit of government for each purpose. The State and county expenditures were primarily for highways and public benefits. The expenditures of the municipalities and townships were primarily for public benefits and education. The expenditures for public benefit are greatest in the areas of dense population. General government costs exerted but a small influence upon the total, being responsible for but 3.9 percent of all expenditures.

The second division of the table subdivides by governmental units the total expenditure for each purpose. It can be seen that of the total highway expenditures the major portions were made by the State, the counties, and the city of Detroit.

Just as all taxes are finally paid by the townships and urban communities of the State, so also the expenditures by the State and counties are made either in or for these same subdivisions. Table 13 gives the per capita total expenditures in the various units of government made both by their governing bodies and in or for them by the State and counties.

TABLE 13.—Per capita expenditures by purpose in the several classes of place

Expended in—	Highways	Education	Public benefit	Government	Total
Townships.....	\$43.19	\$22.14	\$12.92	\$3.29	\$81.54
Places up to 2,500.....	14.60	36.15	20.84	5.22	76.81
Places 2,500 to 15,000.....	10.43	29.20	26.63	4.20	70.46
Places 15,000 to 75,000.....	6.73	32.75	33.98	3.23	76.69
Places 75,000 to 400,000.....	5.65	28.89	26.54	2.22	63.30
Detroit.....	21.52	25.66	58.70	3.06	108.94
Entire State.....	21.72	27.15	34.07	3.36	86.30

Table 13, allocating the total expenditures among units of government, is comparable with table 3, allocating total taxes in the same general manner. Subject to the difference previously noted as to the base for current tax levies and current expenditures, it is possible to compare directly the taxes paid by the units of government and the expenditures made within them. These facts are shown in table 14.



TABLE 14.—Per capita valuation, taxation, and expenditures in 1930

Class of place	Valuation	Taxation	Expenditures	Ratio of per capita expenditures to per capita taxation
Townships.....	\$1,424	\$55.97	\$81.54	1.46
Places 2,500 or less.....	1,116	63.34	76.81	1.21
Places 2,500 to 15,000.....	1,333	77.46	70.46	.91
Places 15,000 to 75,000.....	2,010	93.96	76.69	.82
Places 75,000 to 400,000.....	1,768	82.42	63.30	.77
Detroit.....	2,151	94.82	108.94	1.15
Average for State.....	1,744	79.45	86.30	1.09

## COMPARISON OF TAXES AND EXPENDITURES SHOWS SHIFT OF FUNDS FROM URBAN TO RURAL AREAS

The ratio of the per capita expenditures to the per capita taxation is some index of the flow of funds to the less populous areas from other communities. For example, the expenditures within the townships were 46 percent greater than all taxes paid by them. This does not necessarily mean that the townships are benefited to this extent. When direct aids are paid to local authorities and are expended by them, such as is the case with certain school funds, there is a distinct benefit. On the other hand, the construction of a through highway between two large cities may be of more benefit to the residents of the urban communities than to those of the rural districts through which it passes. The ratios also are in some cases materially affected by expenditures financed from borrowings. This causes the difference between taxes paid and expenditures in certain urban communities to be less than would otherwise be the case.

A somewhat different analysis showing the relationships by percentages rather than by per capita figures also indicates this general shift in funds. (See table 15.) In connection with the financial data are given the percentages of population and vehicle ownership in the units of government.

TABLE 15.—Distribution of population, motor-vehicle ownership, property valuation, taxes paid, and expenditures made in the several classes of place in 1930

Class of place	Population	Motor vehicle ownership	Valuation	Taxes paid	Expenditures made
	Percent	Percent	Percent	Percent	Percent
Townships.....	25.7	24.6	21.0	18.1	24.3
Places up to 2,500.....	6.1	7.5	3.9	4.8	5.4
Places 2,500 to 15,000.....	12.1	12.7	9.3	11.8	9.9
Places 15,000 to 75,000.....	13.7	13.7	15.8	16.2	12.2
Places 75,000 to 400,000.....	10.0	11.1	10.1	10.4	7.3
Detroit.....	32.4	30.4	39.9	38.7	40.9
Total.....	100.0	100.0	100.0	100.0	100.0

## HIGHWAY EXPENDITURES

In dealing with highway and street expenditures, it is important to distinguish an expenditure made under the authority and control of a governmental unit from an expenditure made within the boundaries of the area. For example, under the first concept, a city street expenditure is the amount expended by city authorities; under the second concept, a city street expenditure is the amount expended on all streets within the city, whether by municipal authorities, the county, the State, or other agencies. It is believed that in this summary, in the expenditure tables, this distinction has been made sufficiently clear to avoid difficulty.

Table 16 gives the total amounts expended by units of government upon the highway systems, and also the division as to the area in which the funds were expended.

TABLE 16.—Highway and street expenditures in 1930

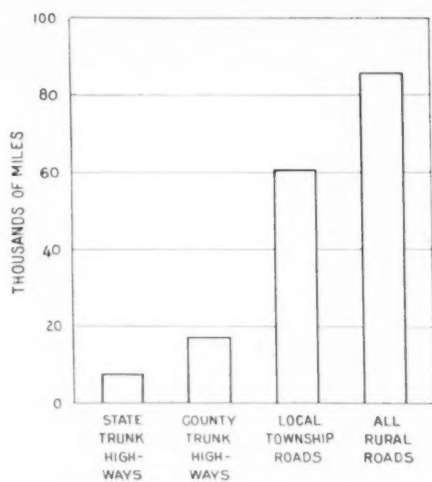
Unit of government	Expended by each unit of government		Expended on—	
	Amount	Percent	Rural roads	Urban streets
State (State system).....	\$33,225,000	31.6	\$27,784,000	\$5,441,000
County (county system).....	28,185,300	26.8	19,764,100	8,421,200
Townships.....	6,264,400	6.0	6,264,400	—
Places 2,500 or less.....	1,726,200	1.6	—	1,726,200
Places 2,500 to 15,000.....	4,337,200	4.1	—	4,337,200
Places 15,000 to 75,000.....	3,330,000	3.2	—	3,330,000
Places 75,000 to 400,000.....	1,808,800	1.7	—	1,808,800
Detroit.....	26,300,200	25.0	—	26,300,200
Total.....	105,177,100	100.0	53,812,500	51,364,600

The concept of highway expenditures in this survey differs from that often found in public accounting. Only those expenditures have been considered as highway expenditures which pertain directly to the construction and maintenance of the roads themselves. Often any expenditure made upon or near a street or under control of the local public works department is considered as a street expenditure. Therefore, often the cost of ornamental lighting systems, sidewalks, sewers, and water systems are shown in city statements as street expenditures. It is also customary to omit from public expenditures any projects financed through special assessments. The highway expenditures as shown in these surveys include all amounts expended for such purposes, whether financed from general levies, special assessments, or specific motor vehicle imposts.

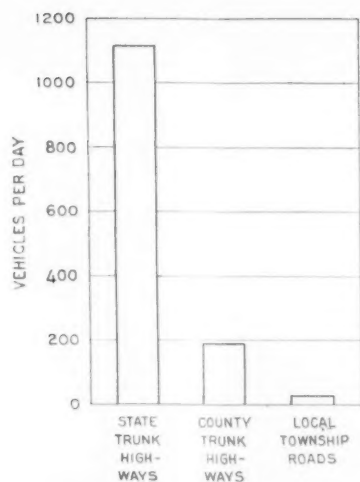
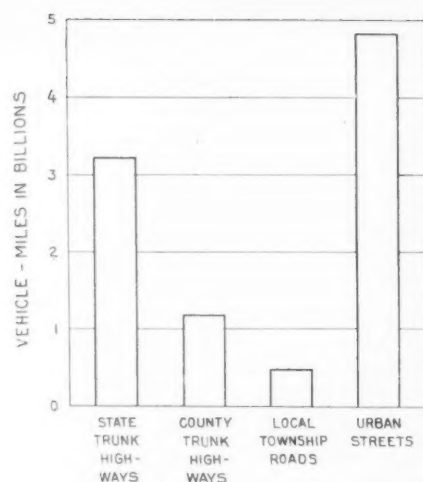
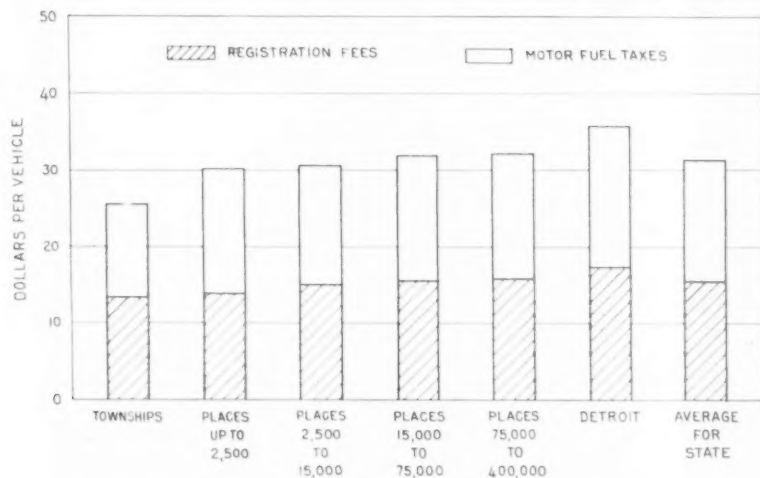
Upon all Michigan roads and streets in 1930 there was expended a total of \$105,177,100. The total taxes imposed for street and highway purposes in the same year amounted to \$111,853,900, exceeding the expenditures by \$6,676,800. Of the total there was expended by the State, \$33,225,000, or 31.6 percent; by the counties, \$28,185,300, or 26.8 percent. The townships expended \$6,264,400, or 6.0 percent, and the cities the remaining \$37,502,400, or 35.6 percent. The city of Detroit was responsible for \$26,300,200 of all street and highway expenditures made within the year. This is the division of expenditures by expending agencies.

A considerable part of expenditures by the State of Michigan and by the counties is on parts of and for highway systems lying within village and city limits. The State expended \$5,441,000 within urban communities, and the counties, \$8,421,200. If these amounts are added to the sums expended by the municipal authorities, it will be found that \$51,364,600 was expended upon urban streets and \$53,812,500 on rural roads.

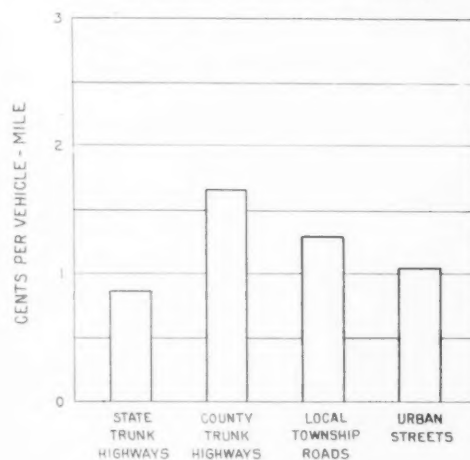
Table 17 gives the distribution of highway and street expenditures in 1930 according to the governmental agencies providing the funds. There is also a division between those expenditures which were made out of current tax revenues and those which were made out of loan and reserve funds. Federal-aid payments to Michigan in 1930 amounted to \$2,934,000. Expenditures out of current taxes (including Federal aid) totaled \$85,390,900, or 81.2 percent of the total. The sum of \$19,786,200 was expended out of loans and



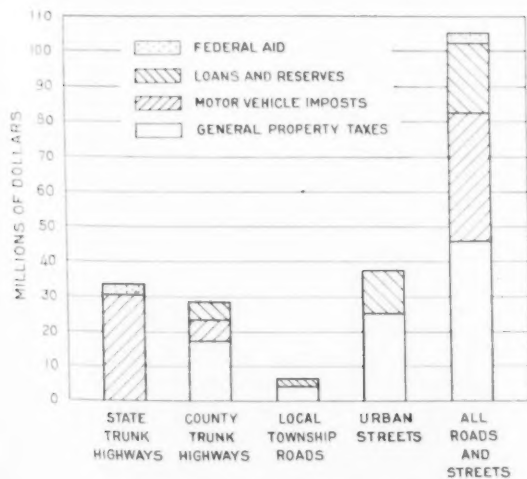
TOTAL MILEAGE OF RURAL HIGHWAY SYSTEMS

AVERAGE DENSITY OF TRAFFIC ON RURAL HIGHWAY SYSTEMS  
(FROM MICHIGAN TRANSPORT SURVEY)TOTAL TRAFFIC OF MICHIGAN VEHICLES ON RURAL HIGHWAY SYSTEMS AND URBAN STREETS  
(FROM MICHIGAN TRANSPORT SURVEY)

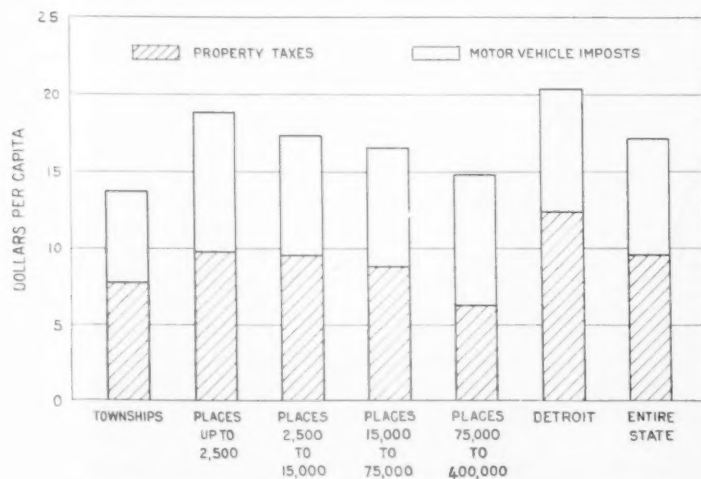
AVERAGE REGISTRATION FEES AND MOTOR FUEL TAX PAYMENTS BY MOTOR VEHICLE OWNERS IN THE SEVERAL CLASSES OF LOCAL UNIT AND THE STATE AS A WHOLE (TABLE 10)



EXPENDITURES PER VEHICLE-MILE ON RURAL HIGHWAY SYSTEMS AND URBAN STREETS (TABLE 19)



TOTAL EXPENDITURES ON HIGHWAY SYSTEMS AND URBAN STREETS, SHOWING SOURCES OF FUNDS (TABLE 22)



PER CAPITA CONTRIBUTIONS BY TAXPAYERS IN THE SEVERAL CLASSES OF LOCAL UNIT TO CURRENT TAXES EXPENDED ON ROADS AND STREETS (BASED ON TABLE 22)

GRAPHICAL SUMMARY OF RELATIONS BETWEEN HIGHWAY TAXES, TRAVEL, AND EXPENDITURES IN MICHIGAN IN 1930.

TABLE 17.—Funds expended on the several highway systems and the city streets in 1930, and the approximate amounts and percentages of these funds provided by imposts made by the various governmental units, and by loan and reserve funds

Highway system and form of revenue	Governmental agency providing funds				Total	Percent- age of total cur- rent tax funds	Percent- age of total funds
	Federal government	State	Counties	Local governments			
State trunk system:							
Loans or reserves.....							
Current taxes.....	\$2,934,000	\$30,291,000			\$33,225,000	38.9	
Total.....	2,934,000	30,291,000			33,225,000		31.6
Percent.....	8.8	91.2			100.0		
County highways:							
Loans or reserves.....			\$5,059,000		\$5,059,000		
Current taxes.....		\$6,230,000	16,896,300		23,126,300	27.1	
Total.....		6,230,000	21,955,300		28,185,300		26.8
Percent.....		22.1	77.9		100.0		
Local rural (township) roads:							
Loans or reserves.....				\$2,251,300	\$2,251,300		
Current taxes.....				4,013,100	4,013,100	4.7	
Total.....				6,264,400	6,264,400		6.0
Percent.....				100.0	100.0		
City streets outside Detroit: <sup>1</sup>							
Loans or reserves.....				\$688,100	\$688,100		
Current taxes.....				10,514,100	10,514,100	12.3	
Total.....				11,202,200	11,202,200		10.6
Percent.....				100.0	100.0		
Detroit streets: <sup>1</sup>							
Loans or reserves.....				\$11,787,800	\$11,787,800		
Current taxes.....				14,512,400	14,512,400	17.0	
Total.....				26,300,200	26,300,200		25.0
Percent.....				100.0	100.0		
All roads and streets:							
Loans or reserves.....			\$5,059,000	\$14,727,200	\$19,786,200		
Current taxes.....	\$2,934,000	\$36,521,000	16,896,300	29,039,600	85,390,900	100.0	
Total.....	2,934,000	36,521,000	21,955,300	43,766,800	105,177,100		100.0
Percent.....	2.8	34.7	20.9	41.6	100.0		

<sup>1</sup> Does not include expenditures by State and counties on streets which are part of the State and county systems.

reserves; of this amount \$11,787,000 was indebtedness incurred for streets in Detroit.

Of the funds expended, Federal aid accounted for 2.8 percent; 34.7 percent came from State imposts (motor-vehicle fees and motor-fuel taxes), and the remainder from the taxes levied and indebtedness incurred by the counties and local governments.

The State highway system is an enterprise supported jointly by the United States and the State. The county highway activities are carried on by receipts from both State and county revenues, the present county revenues being about two and one half times the funds raised from the State. These State funds for the county system are given directly as a State aid toward a county program over which the State exercises no jurisdiction except such advisory services as are requested. The other highway systems are under local control alone and are supported by local funds. Under the Covert road act parts of several localities and even counties may be consolidated in a special road district for the construction of a specific highway.

#### COMPARISONS MADE BETWEEN TRAVEL AND EXPENDITURES

The facts developed by the Michigan transport survey<sup>6</sup> furnish the basis for comparisons between travel and expenditures. So far as the totals as divided between the urban and rural systems are concerned, both travel and expenditures were almost equal in these areas. Fifty-one and two tenths percent of all highway expenditures was made upon rural roads, and these roads carried 50.3 percent of all of the traffic, while city and village streets were responsible for 48.8 percent

of the expenditures and carried 49.7 percent of the total traffic.

This rural travel may be further subdivided by highway systems. Of the total expenditure for highways, 26.4 percent was made upon the State trunk system in rural areas (see table 16). These same highways carried 33.1 percent of the total travel. Upon the same basis, 18.8 percent of all highway expenditures was made upon rural county roads which carried 12.2 percent of the total travel. A very small percentage of both expenditures and travel is chargeable to the local township roads. These roads cost 6 percent of the total and carried 5 percent of all of the traffic.

From the facts ascertained by this survey and by the Michigan transport survey, it is possible to express highway expenditures in terms of cents per vehicle-mile of travel. Here again it is necessary to distinguish between different classifications of highway systems.

Certain routes through cities are partly or wholly under county or State jurisdiction with respect to highway construction and maintenance. In most cases expenditures for work on such routes are made directly by county or State, for what may be considered county or State roads. The condition is exactly the same as when a county constructs a county road across an individual township, or when the State builds across a particular county. From this point of view these expenditures are properly chargeable to county or State roads, and not to city streets. This position was taken in the recent report on the Michigan transport survey already referred to, and certain road and street costs per vehicle-mile were ascertained.

It is interesting to note that if, with respect to city streets, all payments by counties and State for work

<sup>6</sup> See PUBLIC ROADS, vol. 13, no. 12, February 1933.



TABLE 18.—Expenditures per vehicle-mile of travel in 1930-31 on the several highway systems of Michigan, as determined by the Michigan transport survey<sup>1</sup>

Highway system	Expenditures per vehicle-mile	Annual vehicle-miles on system
	Cents	
Township roads.....	1.29	484,647,365
County roads <sup>2</sup> .....	2.37	1,191,399,055
Trunk lines <sup>2</sup> .....	1.05	3,213,699,440
City streets.....	.78	4,830,371,675
Average, all highways.....	1.18	

<sup>1</sup> See Public Roads, vol. 13, no. 12, p. 193.<sup>2</sup> Entire system, including portions within incorporated areas.

TABLE 19.—Expenditures per vehicle-mile of travel on Michigan highways in 1930, as determined by the Michigan financial survey

Highway system	Amount
	Cents
State trunk lines <sup>1</sup> .....	0.86
County roads <sup>1</sup> .....	1.66
Township roads.....	1.29
Urban streets.....	1.06
Average, all highways.....	1.08

<sup>1</sup> Does not include portions within incorporated areas.

on routes through cities are classified as city expenditures, the general relations of the unit vehicle-mile costs, though altered, are not so far changed as to produce substantially different conclusions. The expenditure per vehicle-mile for township roads is unchanged. The corresponding expenditure for county roads is reduced, but retains the same relative place. The expenditures for city streets obviously rise and those for State highways are decreased, producing a change which reverses the relative order of these two items but which does not displace either with respect to town or county expenditures. Table 18 gives the expenditures per vehicle-mile as previously published in the report of the Michigan transport survey. Table 19 gives the revised figures based on the alternate method of classifying expenditures. Slight differences occur because the traffic survey was based on the fiscal year and the financial survey on the calendar year.

It should be observed that the values given in tables 18 and 19, based on the actual expenditures of a single year, do not represent the true annual cost of improving and maintaining the several systems of roads and streets. However, highway expenditures do not

vary widely from year to year. For this reason it is believed that the 1930 expenditures per vehicle-mile present a fairly accurate picture of the relations between travel and expenditures on the various systems.

### RELATIONS ESTABLISHED BETWEEN HIGHWAY TAXES, TRAVEL, AND EXPENDITURES

The total mileage of rural highways in Michigan in 1930 was 85,080. The State highway system consisted of 7,691 miles, of which 4,671 miles were Federal-aid highways. The county highway system contained 17,175 miles, and the local township roads, 60,214 miles. No data are available on mileage of village and city streets.

Expenditures on the State highway system in 1930, including portions within urban areas, were \$33,225,000; on the county systems, including portions within urban areas, \$28,185,300; on the township local roads, \$6,264,400; on Detroit streets, \$26,300,200; and on other streets, \$11,202,200. Expenditures on all rural roads were \$53,812,500; on all urban streets, \$51,364,600.

Of the total property taxes expended on all roads and streets, 36.8 percent was expended on county trunk highways, 8.7 percent on local township roads, and 54.5 percent on urban streets.

Of the total motor-vehicle taxes and imposts expended on all roads and streets, 82.9 percent was expended on the State trunk system, and 17.1 percent was expended on the county trunk systems.

Of the total of all taxes and imposts expended on all roads and streets, rural property and motor-vehicle owners paid 20.5 percent, and travel by rural vehicles made up 20.6 percent of the travel on all roads and streets; urban property and motor-vehicle owners paid 79.5 percent, and travel by urban vehicles made up 79.4 percent of the total travel.

Of the total expenditures on all roads and streets, 48.8 percent was expended on urban streets, which carried 49.7 percent of the total traffic in the State; 26.4 percent was expended on rural State trunk highways, which carried 33.1 percent of the traffic; 18.8 percent was expended on rural county roads, which carried 12.2 percent of the traffic; and 6 percent was expended on local township roads, which carried 5 percent of the traffic.

### CONSTRUCTION AND MAINTENANCE EXPENDITURES ON STATE SYSTEM SHOWN

The total expenditures by highway systems include construction and maintenance operations and also general engineering costs, overhead, supervision, and interest upon highway obligations. The condition of local records prohibits the division in the counties, townships, and cities of the total into construction and maintenance costs. Such a classification is possible only for the State highway system. Table 20 gives the total State expenditures for construction and maintenance on Federal-aid and other State trunk highways, and the distribution of these expenditures between rural and urban areas.

The construction item is significant. The place of such activities changes from year to year. Although the totals for the system tend to be rather constant from year to year, the amounts expended in any particular place for any short-time period may vary greatly. The State construction expenditures in urban communities in 1930 are proportionately much greater with respect to maintenance costs than in rural areas. In Michigan the State assumes the responsibility for the construction and maintenance of all highways designated as the trunk system,

whether these are roads in townships or connecting streets in cities. It either awards \$2,000 per mile to those cities which maintain such streets in a manner specified by the highway department, or the depart-

TABLE 20.—Construction and maintenance expenditures in 1930 on the State trunk-line system, in both rural and urban areas (interest, engineering, supervision, and other undistributed overhead costs not included)

Highway system	Construction		Maintenance		Construction and maintenance		
	Amount	Per cent	Amount	Per cent	Amount	Per cent	Percentage of total
Federal-aid system:							
Rural	\$12,675,300		\$3,347,500		\$16,022,800		
Urban	1,735,900		310,000		2,045,900		
Total	14,411,200	79.8	3,657,500	20.2	18,068,700	100.0	60.3
Other State trunk highways:							
Rural	6,830,100		2,094,100		8,924,200		
Urban	2,811,000		141,700		2,952,700		
Total	9,641,100	81.2	2,235,800	18.8	11,876,900	100.0	39.7
Entire State system:							
Rural	19,505,400		5,441,600		24,947,000		
Urban	4,546,900		451,700		4,998,600		
Total	24,052,300	80.3	5,893,300	19.7	29,945,600	100.0	100.0

<sup>1</sup> Urban extensions of highways on the Federal-aid system.

ment itself pays for the construction and maintenance of a 20-foot center lane. These expenditures shown as State highway costs in urban localities include all of these payments by the State for the city portion of the State system. The amounts are not duplicated in the city local expenditures.

#### STREET AND HIGHWAY EXPENDITURES COMPARED WITH TAXES

All the highway expenditures are made within the boundaries of the several classes of place, and all highway funds come from these same places. The relationship between the taxes paid in the various local units of government and the expenditures made on their highway and street systems is shown in table 21.

TABLE 21.—Comparison of street and highway taxes and expenditures in 1930 by places

Class of place	Street and highway taxes paid		Street and highway expenditures		Ratio of expenditures to taxes
	Amount	Percent	Amount	Percent	
Townships	\$24,333,700	21.8	\$53,812,500	51.2	2.21
Places up to 2,500	6,521,200	5.8	4,296,900	4.1	.66
Places 2,500 to 15,000	12,643,700	11.3	6,104,000	5.8	.48
Places 15,000 to 75,000	15,573,400	13.9	4,466,600	4.2	.29
Places 75,000 to 400,000	10,875,000	9.7	2,737,400	2.6	.25
Detroit	41,906,900	37.5	33,759,700	32.1	.81
Total	111,853,900	100.0	105,177,100	100.0	.94

The street and highway taxes exceeded the street and highway expenditures. The reason for this is that these taxes are levied both for current expenditures and to retire indebtedness. The obligations retired during the year were considerably greater than the new indebtedness incurred for highway purposes. New local construction, both in rural and urban areas, was decidedly less in 1930 than in the few years immediately preceding.

The comparison of expenditures with taxes indicates a decided flow of funds from urban communities to rural areas. The relationships are so affected by the policies of the larger metropolitan units in financing their street programs out of current levies or borrowings as to be of little value without considering the influence of these urban areas. Table 21 would seem to indicate

that sufficient revenues were raised in Detroit to meet all of the current highway expenditures made within it. This is not the case. Almost \$20,000,000 expended on the Detroit street program in 1930 came from borrowings which ultimately must be added to tax levies. Detroit actually contributed \$20,783,900 to the State and county highway programs, and there were expended by these agencies within the city, \$7,459,500. Thus, the flow of revenues from such metropolitan centers may be greater than a mere tabulation of current taxes and current expenditures would indicate.

TABLE SHOWS CONTRIBUTION OF TOWNSHIPS AND INCORPORATED PLACES TO CURRENT TAXES EXPENDED ON ROADS AND STREETS

The funds derived from taxes levied in a given year are used to defray current expenses, to retire indebtedness, and to establish reserves for future expenditure. Table 22 deals primarily with that portion of the taxes levied in 1930 for streets and highways, totaling \$82,456,900, which was used on the current program of 1930. The total is subdivided into imposts on general property (including special assessments) and imposts on motor vehicles (including the motor-fuel tax). The table shows the amounts contributed by taxpayers in each of the classes of place to current expenditures on State, county, and township roads, and urban streets. It also gives the amounts expended on each system out of loans and reserves, and the amount of Federal aid.

The data given in table 22 should not be confused with the information regarding the total street and highway levies given in tables 6 and 7. Thus it is shown in table 7 that taxpayers in the townships were charged with 21.8 percent of all levies for streets and highways in 1930, while table 22 shows that taxpayers in the townships contributed 20.5 percent of the current taxes expended in 1930 on streets and highways.

Of the total current expenditures, 43.7 percent came from property tax levies, 34.7 percent from motor vehicle imposts, and 21.6 percent from loans and reserves and Federal aid. The property taxes expended amounted to approximately 46 million dollars, of which 36.8 percent was expended upon county roads, 8.7 percent on township roads, and 54.5 percent on city streets. Of the motor-vehicle imposts of approximately 36½ million dollars, 82.9 percent was used for State trunk roads and the remainder on county trunk roads. Most of the borrowing was in the urban communities, where 63 percent of all of the new indebtedness was incurred. Included in the general property imposts are special assessments. In Michigan these include not only levies for city streets but also large amounts for rural construction. The distribution in table 22 is based upon highway systems administered by the various authorities, as distinct from the classification by place of expenditure.

The information given in table 22, when analyzed with reference to other data brought out in this report, leads to certain conclusions regarding the relations existing in Michigan in 1930, between the following factors:

1. Taxes paid for highways by taxpayers in the several classes of local government unit;
2. The funds expended on the several highway systems and the local streets;
3. The relative contributions by motor-vehicle owners in the several classes of local unit to the total travel of Michigan vehicles in the State;
4. The relative amounts of travel on the several highway systems and the local streets.

TABLE 22.—Approximate amounts of the 1930 taxes and imposts expended on the current highway and street program, listed according to highway system, type of tax, and class of local unit in which the tax was paid

IMPOSTS ON GENERAL PROPERTY											
Paid by taxpayers in—	Highway system										
	State trunk		County trunk		Township local		Urban streets		All highways and streets		
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Percentage of total
Townships.....			\$5,812,400	61.3	\$3,675,900	38.7			\$9,488,300	100.0	20.6
Places 2,500 or less.....			844,800	29.7	268,900	9.5	\$1,726,200	60.8	2,839,900	100.0	6.2
Places 2,500 to 15,000.....			1,790,900	32.5	68,300	1.2	3,649,100	66.3	5,508,300	100.0	12.0
Places 15,000 to 75,000.....			2,450,000	42.4			3,330,000	57.6	5,780,000	100.0	12.6
Places 75,000 to 400,000.....			1,182,700	39.5			1,808,800	60.5	2,991,500	100.0	6.5
Detroit.....			4,815,500	24.9			14,512,400	75.1	19,327,900	100.0	42.1
Total.....			16,896,300	36.8	4,013,100	8.7	25,026,500	54.5	45,935,900	100.0	100.0
IMPOSTS ON MOTOR VEHICLES											
Townships.....	\$6,149,000	82.9	\$1,264,700	17.1					\$7,413,700	100.0	20.3
Places 2,500 or less.....	2,211,200	82.9	454,800	17.1					2,666,000	100.0	7.3
Places 2,500 to 15,000.....	3,756,100	82.9	772,500	17.1					4,528,600	100.0	12.4
Places 15,000 to 75,000.....	4,240,700	82.9	872,200	17.1					5,112,900	100.0	14.0
Places 75,000 to 400,000.....	3,453,200	82.9	710,200	17.1					4,163,400	100.0	11.4
Detroit.....	10,480,800	82.9	2,155,600	17.1					12,636,400	100.0	34.6
Total.....	30,291,000	82.9	6,230,000	17.1					36,521,000	100.0	100.0
ALL IMPOSTS AND TAXES											
Townships.....	\$6,149,000	36.4	\$7,077,100	41.9	\$3,675,900	21.7			\$16,902,000	100.0	20.5
Places 2,500 or less.....	2,211,200	40.1	1,299,600	23.6	268,900	4.9	\$1,726,200	31.4	5,505,900	100.0	6.7
Places 2,500 to 15,000.....	3,756,100	37.4	2,563,400	25.5	68,300	0.7	3,649,100	36.4	10,036,900	100.0	12.2
Places 15,000 to 75,000.....	4,240,700	38.9	3,322,200	30.5			3,330,000	30.6	10,892,900	100.0	13.2
Places 75,000 to 400,000.....	3,453,200	48.3	1,892,900	26.4			1,808,800	25.3	7,154,900	100.0	8.7
Detroit.....	10,480,800	32.8	6,971,100	21.8			14,512,400	45.4	31,964,300	100.0	38.7
Total.....	30,291,000	36.7	23,126,300	28.0	4,013,100	4.9	25,026,500	30.4	82,456,900	100.0	100.0
Federal-aid.....	2,934,000								2,934,000		
Loans and reserves.....			5,059,000	25.6	2,251,300	11.4	12,475,900	63.0	19,786,200	100.0	
Grand total.....	33,225,000	31.6	28,185,300	26.8	6,264,400	6.0	37,502,400	35.6	105,177,100	100.0	

## CONCLUSIONS

1. No funds raised from taxes on property were expended on State highways.

2. Rural property paid no tax for urban streets.

3. Of the total tax on rural property expended for highway purposes—

(a) 61.3 percent was expended on county trunk highways;

(b) 38.7 percent was expended on local township roads.

4. Of the total tax on urban property expended for highway purposes—

(a) 30.4 percent was expended on county trunk highways, including portions within urban areas;

(b) 0.9 percent was expended on local township roads;

(c) 68.7 percent was expended on urban streets.

5. Since, of the total assessed property valuation of \$8,447,141,000, 21 percent, or \$1,773,958,100, was rural and 79 percent, or \$6,673,182,900, was urban—

(a) Expenditures from property taxes for all highways were at the following rates per \$100 valuation:

Rural—54 cents.

Urban—55 cents.

(b) Expenditures from property taxes for county trunk highways were at the following rates per \$100 valuation:

Rural—33 cents.

Urban—17 cents.

(c) Expenditures from property taxes for local township roads were at the following rates per \$100 valuation:

Rural—21 cents.

Urban—0.5 cent.

(d) Expenditures from property taxes for urban streets were at the following rates per \$100 valuation:

Rural—no tax.

Urban—37.5 cents.

6. Of the total property taxes expended on all roads and streets—

(a) 36.8 percent was expended on county trunk highways;

(b) 8.7 percent was expended on local township roads;

(c) 54.5 percent was expended on urban streets.

7. Of the total motor-vehicle imposts expended on all classes of roads and streets—

(a) Rural motor vehicle owners (residents of townships) paid 20.3 percent, and travel by these same rural owners made up 20.6 percent of the total travel on all classes of roads and streets;

(b) Urban motor-vehicle owners paid 79.7 percent, and urban vehicles made up 79.4 percent of the total travel.

8. Of the total motor vehicle imposts expended—

(a) 82.9 percent was expended on State trunk highways, including portions within urban areas;



TABLE 23.—Comparison of taxation and expenditures in Michigan in 1930

\$1,000 in taxes			\$1,000 in expenditures				
Residents of—	Pay—	In—	Division by purpose	Subdivision by highway system	Source of expenditures	Amount	Percent
Townships.....	\$128.36	General property taxes, \$733.53.	Education, \$314.66.	State highways, \$79.50.	Taxes paid in—		
Places 2,500 or less.....	32.61				Townships.....	\$14.71	18.51
Places 2,500 to 15,000.....	84.82				Incorporated places.....	57.77	72.66
Places 15,000 to 75,000.....	122.14				Federal-aid.....	7.02	8.83
Places 75,000 to 400,000.....	76.35				Loans or reserves.....		
Detroit.....	289.25						
Townships.....	23.31	Motor-vehicles taxes, \$114.98.	Highways, \$251.68.	County trunk highways, \$67.45.	Taxes paid in—		
Places 2,500 or less.....	8.35				Townships.....	16.94	25.11
Places 2,500 to 15,000.....	14.31				Incorporated places.....	38.40	56.94
Places 15,000 to 75,000.....	16.10				Loans or reserves.....	12.11	17.95
Places 75,000 to 400,000.....	13.06						
Detroit.....	39.85						
Townships.....	29.58	Miscellaneous taxes, \$151.49.	Public benefit, \$394.75.	Township roads \$14.99	Taxes paid in—		
Places 2,500 or less.....	7.49				Townships.....	8.79	58.68
Places 2,500 to 15,000.....	18.76				Incorporated places.....	.81	5.38
Places 15,000 to 75,000.....	23.85				Loans or reserves.....	5.39	35.94
Places 75,000 to 400,000.....	14.31						
Detroit.....	57.50						
Townships.....	29.58	Miscellaneous taxes, \$151.49.	Government, \$38.91.	Urban streets, \$89.74.	Taxes paid in—		
Places 2,500 or less.....	7.49				Townships.....		
Places 2,500 to 15,000.....	18.76				Incorporated places.....	59.89	66.73
Places 15,000 to 75,000.....	23.85				Loans or reserves.....	29.85	33.27
Places 75,000 to 400,000.....	14.31						
Detroit.....	57.50						

(b) 17.1 percent was expended on county trunk highways, including portions within urban areas;

(c) None of these funds were expended on urban streets not on the State or county systems.

9. Of all current imposts and taxes expended on all roads and streets—

(a) 36.7 percent was expended on State trunk highways;

(b) 28.0 percent was expended on county trunk highways;

(c) 4.9 percent was expended on local township roads;

(d) 30.4 percent was expended on urban streets by municipal authorities.

10. Of all current imposts and taxes expended on all roads and streets—

(a) Rural property and motor-vehicle owners paid 20.5 percent, and travel by rural vehicles made up 20.6 percent of the total travel on all classes of roads and streets;

(b) City and village property owners paid 79.5 percent, and travel by urban vehicles made up 79.4 percent of the total travel.

11. Of the total expenditures (including Federal aid and expenditures out of loans and reserves) on all roads and streets—

(a) 48.8 percent was expended on urban streets (including portions on the State and county systems), and urban streets car-

ried 49.7 percent of the total traffic in the State;

(b) 26.4 percent was expended on rural State trunk highways, which carried 33.1 percent of the traffic;

(c) 18.8 percent was expended on rural county roads, which carried 12.2 percent of the traffic;

(d) 6 percent was expended on local township roads, which carried 5 percent of the traffic.

#### FINAL COMPARISON OF TAXES AND EXPENDITURES

As a means of summarizing the general taxation and expenditures in Michigan in 1930, table 23 has been prepared. It shows a comparison between the sources of \$1,000 in taxes and the manner in which \$1,000 was expended, and is based on tables given previously in the report. The comparison, however, is not a direct one, for the \$1,000 unit cannot be identical for both taxes and expenditures. If it were desired to make the two sides of the tabulation balance exactly, as in the case of a true balance sheet, it would be necessary to include proceeds from bonds and loans on the left of the double line and principal payments on the right, as well as to make due allowance for balances carried over and carried forward. The complete figures necessary for such a presentation are not available, so that expenditures as given cannot be said to balance receipts from taxes. It is believed, however, that table 23 gives a helpful picture of the relation between tax money received and actual expenditures in the year 1930.

# ROAD PUBLICATIONS of the BUREAU OF PUBLIC ROADS

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Any of the following publications may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D.C. As his office is not connected with the department and as the department does not sell publications, please send no remittance to the United States Department of Agriculture.

## ANNUAL REPORTS

- Report of the Chief of the Bureau of Public Roads, 1924. 5 cents.  
Report of the Chief of the Bureau of Public Roads, 1927. 5 cents.  
Report of the Chief of the Bureau of Public Roads, 1928. 5 cents.  
Report of the Chief of the Bureau of Public Roads, 1929. 10 cents.  
Report of the Chief of the Bureau of Public Roads, 1931. 10 cents.  
Report of the Chief of the Bureau of Public Roads, 1932. 10 cents.

## DEPARTMENT BULLETINS

- No. 136D . . Highway Bonds. 20 cents.  
No. 347D . . Methods for the Determination of the Physical Properties of Road-Building Rock. 10 cents.  
No. 532D . . The Expansion and Contraction of Concrete and Concrete Roads. 10 cents.  
No. 583D . . Reports on Experimental Convict Road Camp, Fulton County, Ga. 25 cents.  
No. 660D . . Highway Cost Keeping. 10 cents.  
No. 1279D . . Rural Highway Mileage, Income, and Expenditures, 1921 and 1922. 15 cents.

## TECHNICAL BULLETINS

- No. 55T . . Highway Bridge Surveys. 20 cents.  
No. 265T . . Electrical Equipment on Movable Bridges. 35 cents.

## MISCELLANEOUS CIRCULARS

- No. 62MC . . Standards Governing Plans, Specifications, Contract Forms, and Estimates for Federal-Aid Highway Projects. 5 cents.  
No. 93MC . . Direct Production Costs of Broken Stone. 25 cents.  
No. 109MC . . Federal Legislation and Regulations Relating to the Improvement of Federal-Aid Roads and National-Forest Roads and Trails, Flood Relief, and Miscellaneous Matters. 10 cents.

## MISCELLANEOUS PUBLICATION

- No. 76MP . . The results of Physical Tests of Road-Building Rock. 25 cents.

## REPRINT FROM PUBLIC ROADS

- Reports on Subgrade Soil Studies. 40 cents.

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Single copies of the following publications may be obtained from the Bureau of Public Roads upon request. They cannot be purchased from the Superintendent of Documents.

## SEPARATE REPRINT FROM THE YEARBOOK

- No. 1036Y . . Road Work on Farm Outlets Needs Skill and Right Equipment.

## TRANSPORTATION SURVEY REPORTS

- Report of a Survey of Transportation on the State Highway System of Ohio (1927).  
Report of a Survey of Transportation on the State Highways of Vermont (1927).  
Report of a Survey of Transportation on the State Highways of New Hampshire (1927).  
Report of a Plan of Highway Improvement in the Regional Area of Cleveland, Ohio (1928).  
Report of a Survey of Transportation on the State Highways of Pennsylvania (1928).  
Report of a survey of Traffic on the Federal-Aid Highway Systems of Eleven Western States (1930).

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A complete list of the publications of the Bureau of Public Roads, classified according to subject and including the more important articles in PUBLIC ROADS may be obtained upon request addressed to the U. S. Bureau of Public Roads, Willard Building, Washington, D. C.

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## UNITED STATES DEPARTMENT OF AGRICULTURE

## BUREAU OF PUBLIC ROADS

## CURRENT STATUS OF FEDERAL-AID ROAD CONSTRUCTION

AS OF

MAY 31, 1933

STATE	COMPLETED MILEAGE	UNDER CONSTRUCTION				APPROVED FOR CONSTRUCTION				MILEAGE		BALANCE OF FEDERAL-AID FUNDS AVAILABLE FOR NEW PROJECTS	STATE
		Estimated total cost	Federal aid allotted	Percentage completed		Estimated total cost	Federal aid allotted	Initial	Stage <sup>1</sup>	Initial	Total		
Alabama	2,337.1	5,285,215.68	2,612,608.22	58	132.0	116.6	248.6					3,199,828.75	Alabama
Arizona	1,833.3	2,582,459.72	970,918.53	73	51.5	180.0	231.5					55,656.44	Arizona
Arkansas	1,953.0	4,735,527.91	2,256,876.84	61	132.3	98.8	231.1	901,659.55	450,834.71	80.5	6.4	86.9	Arkansas
California	2,474.2	4,321,625.47	1,695,047.65	75	131.1	70.4	201.5	73,760.41	17,153.65	1.8	2.0	3.8	California
Colorado	1,815.9	3,483,391.13	1,585,433.59	71	151.0	32.5	183.5	394,215.58	177,398.98	27.9	2.2	28.1	Colorado
Connecticut	294.8	4,563,063.46	1,755,512.12	70	51.0	51.0	102.0					127,556.67	Connecticut
Delaware	381.1	752,181.00	150,125.44	65	28.6	15.9	44.5	123,647.45	61,047.96	1.9	1.9	3.8	Delaware
Florida	1,601.0	6,522,837.24	3,155,128.84	81	175.6	170.6	346.2					989,159.32	Florida
Georgia	3,185.8	5,044,924.43	2,046,601.46	81	139.3	137.1	276.4					100,373.36	Georgia
Idaho	1,533.5	2,749,053.49	1,012,794.12	79	127.7	130.8	258.5	86,937.69	42,362.30	8.2	8.2	16.4	Idaho
Illinois	3,091.6	20,432,379.33	7,831,019.26	76	636.4	60.6	697.0	711,775.42	311,735.42	27.0	5.3	32.3	Illinois
Indiana	2,066.6	7,451,152.64	2,978,491.53	86	245.5	20.7	266.2	1,451,684.11	149,628.13	70.6	5.3	75.9	Indiana
Iowa	3,490.2	5,329,273.39	817,330.16	91	261.1	34.5	295.6	251,460.86	81,492.51	8.6	15.2	23.8	Iowa
Kansas	3,397.6	4,131,818.45	1,173,740.72	69	259.1	69.5	328.6					28,103.97	Kansas
Kentucky	1,893.5	4,475,225.11	1,597,617.21	68	187.4	134.3	321.7					278,922.17	Kentucky
Louisiana	1,607.6	6,750,494.94	2,947,282.63	66	94.4	24.8	119.2	38,958.62	3,989.09	1.9	1.9	3.8	Louisiana
Maine	814.9	2,381,955.03	522,942.74	77	10.2	70.8	81.0					34,014.70	Maine
Maryland	852.6	1,354,165.08	253,095.38	66	53.5	1.5	55.0					140,650.82	Maryland
Massachusetts	476.4	4,115,901.96	912,218.48	61	57.2	4.9	62.1					282,623.33	Massachusetts
Michigan	2,312.5	7,241,532.13	2,837,534.95	65	286.3	115.9	402.2	746,640.00	246,995.00	51.8	8.8	60.6	Michigan
Minnesota	4,312.1	4,760,596.74	1,357,788.91	88	156.9	139.9	296.8					69,532.87	Minnesota
Mississippi	1,812.8	7,164,786.43	3,551,396.46	62	231.1	104.8	335.9	10,801.20	5,400.99	1.1	1.1	2.2	Mississippi
Missouri	3,211.9	4,501,301.10	1,792,517.13	71	175.2	22.9	198.1	686,904.85	127,623.60	41.7	16.6	58.3	Missouri
Montana	2,692.1	6,111,336.57	3,422,721.22	69	462.2	252.9	715.1	89,226.46	50,272.66	27.1	23.9	51.0	Montana
Nebraska	4,260.8	6,304,638.44	2,919,138.56	70	165.0	160.3	325.3					302,995.27	Nebraska
Nevada	1,257.3	1,491,156.63	509,173.57	88	39.7	121.2	160.9	31,716.50	11,006.65	7.7	7.7	15.4	Nevada
New Hampshire	433.2	1,066,374.35	494,981.61	75	28.4	3.4	31.8					81,596.32	New Hampshire
New Jersey	532.5	6,046,562.28	2,073,149.89	80	61.0	138.8	199.8					109,558.29	New Jersey
New Mexico	2,221.4	3,289,921.75	1,288,681.06	84	172.3	32.0	204.3					149,118.85	New Mexico
New York	3,505.3	18,628,180.05	5,878,650.00	74	490.5	34.0	524.5					351,782.16	New York
North Carolina	2,312.8	5,066,882.02	2,531,456.05	64	551.3	28.1	579.4	297,959.10	144,475.03	28.2	28.2	56.4	North Carolina
North Dakota	5,212.8	4,350,373.55	1,752,517.13	71	151.3	46.6	197.9	217,194.50	217,194.50	57.8	19.3	77.1	North Dakota
Ohio	3,016.2	5,112,753.05	2,533,340.63	71	230.7	62.8	293.5	76,364.00	23,161.08	1.4	3.2	4.6	Ohio
Oklahoma	2,489.4	4,124,760.46	1,231,792.30	75	194.9	83.8	278.7	524,539.65	105,707.88	38.3	1.6	40.0	Oklahoma
Oregon	1,630.6	3,472,289.99	1,551,322.89	66	107.0	73.7	180.7	59,014.89	25,347.79	1.5	1.5	3.0	Oregon
Pennsylvania	3,844.1	10,694,742.73	2,871,818.57	62	377.4	14.1	391.5					156,013.79	Pennsylvania
Rhode Island	271.6	1,071,153.37	346,531.18	47	22.5	4.5	27.0					51,168.96	Rhode Island
South Carolina	1,542.7	3,397,901.41	1,359,286.06	76	235.5	194.7	430.2	88,632.77	43,627.89	8.1	7.8	15.9	South Carolina
South Dakota	4,315.3	4,350,373.55	1,752,517.13	71	151.3	46.6	197.9					55,315.03	South Dakota
Tennessee	1,700.1	5,156,654.77	2,517,704.42	60	163.8	60.1	223.9					251,720.44	Tennessee
Texas	8,017.4	17,762,279.98	7,912,350.46	69	644.9	527.5	1,172.4	759,702.63	235,151.52	58.6	5.3	64.0	Texas
Utah	1,265.0	1,467,108.57	722,809.53	76	122.0	70.9	192.9	111,015.81	33,304.71	2.5	2.6	5.1	Utah
Vermont	322.9	414,141.77	50,299.46	75	231.0	19.6	250.6	81,649.07	40,666.51	4.6	4.6	9.2	Vermont
Virginia	1,311.1	2,987,343.35	2,296,272.88	73	113.6	61.6	175.2					182,699.06	Virginia
Washington	1,326.7	3,105,525.19	946,420.63	67	113.6	9.7	123.3					55,156.74	Washington
West Virginia	925.6	3,124,589.15	1,273,330.11	75	113.8	8.2	122.0					44,115.11	West Virginia
Wisconsin	2,736.8	6,051,299.53	2,173,161.45	72	260.2	113.0	373.2	52,061.50	21,000.00	1.6	10.1	11.7	Wisconsin
Wyoming	2,104.5	2,111,969.02	917,161.45	82	260.2	147.0	407.2	60,671.62	5,667.16	1.6	1.6	3.2	Wyoming
Hawaii		1,487,599.04	1,230,081.72	52	41.9	41.9	83.8					500,079.00	Hawaii
TOTALS	106,553.7	260,735,791.08	92,669,495.97	69	9,251.9	4,399.5	13,651.4	8,370,733.25	2,642,074.18	507.1	255.2	762.3	TOTALS

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<sup>1</sup>The term "stage" construction refers to additional work done on projects previously approved with Federal aid. In general, such additional work consists of the construction of a surface of higher type than was provided on the original improvement.